

3  
628-161  
H26 gsr  
April 1991  
ENVIROCON, INC.

101 INTERNATIONAL WAY  
POST OFFICE BOX 8243  
MISSOULA, MONTANA 59807  
TELEPHONE: (406) 525-1150  
FAX: (406) 721-4794

PLEASE RETURN

ENVIROCON, INC.

July 19, 1991

Solid and Hazardous Waste Bureau  
Department of Health and  
Environmental Sciences  
Cogswell Building  
Helena, Montana 59620

STATE DOCUMENTS COLLECTION

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Attention: Mr. John Wadhams

**Subject: April 1991 Ground Water Sampling Results**

Dear John:

On April 24, 1991, Burlington Northern Railroad Co., through its contractor Envirocon, Inc., collected five ground water samples as part of the April 1991 monthly ground water sampling round. Four of the samples were collected at Wells LG-10, 89-2, the Thompson residence, and the B Street Municipal Well, and one sample was a trip blank.

All samples were analyzed at Energy Laboratories, Inc. in Billings, Montana. All samples were analyzed for purgeable halocarbons by EPA Method 601, except for the B Street Well sample and the Thompson residence, which were analyzed for volatile organic compounds by EPA Method 524.2.

No detectable VOC or Purgeable halocarbons concentrations were found in the samples collected during the April 1991 sampling round. Complete sample analytical results are enclosed.

Montana State Library



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Mr. John Wadhams  
July 19, 1991  
Page Two

If you have any questions or comments, please contact me at your convenience.

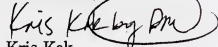
Sincerely,

ENVIROCON, INC.



John Mills

Hydrogeologist



Kris Kok

Project Manager

JPM\pm

Enclosures

cc: Mel Burda  
Steve Pilcher  
Dennis Iverson  
Mike Stevenson



ENVIROCON  
 PO BOX 1154  
 LIVINGSTON MT 59047

**Water Analysis**

PROJECT: Livingston / BN

LAB NO.	91-13911	91-13912	91-13913
SAMPLE IDENTIFICATION	140101-711	140101-712	140101-713
SAMPLE SUBMITTED	04/26/91	04/26/91	04/26/91
DATE REPORTED	05/08/91	05/08/91	05/08/91
SAMPLE DATE	04/24/91	04/24/91	04/24/91
SAMPLE TIME	1030	1200	1440
SAMPLE REVISD	05/30/91	05/30/91	05/30/91
CONSTITUENT	ug/l	ug/l	ug/l
Purgeable Halocarbons	<1.0	<1.0	<1.0
(EPA Method 8260)	<1.0	<1.0	<1.0
Bromodichloromethane	<1.0	<1.0	<1.0
Bromoform	<0.50	<0.50	<0.50
Bromomethane	<1.0	<1.0	<1.0
Carbon tetrachloride	<1.0	<1.0	<1.0
Chlorobenzene	<1.0	<1.0	<1.0
Chloroethane	<1.0	<1.0	<1.0
2-Chloroethylvinyl ether	<1.0	<1.0	<1.0
2-Chlorotoluene	<1.0	<1.0	<1.0
Chloroform	<1.0	<1.0	<1.0
Chloromethane	<1.0	<1.0	<1.0
Dibromochloromethane	<1.0	<1.0	<1.0
1,2-Dichlorobenzene	<1.0	<1.0	<1.0
1,3-Dichlorobenzene	<1.0	<1.0	<1.0
1,4-Dichlorobenzene	<0.50	<0.50	<0.50
1,1-Dichloroethane	<1.0	<1.0	<1.0
1,2-Dichloroethane	<0.50	<0.50	<0.50
1,1-Dichloroethene	<0.50	<0.50	<0.50
cis-1,2-Dichloroethene	<1.0	<1.0	<1.0
trans-1,2-Dichloroethene	<1.0	<1.0	<1.0
1,2-Dichloropropane	<1.0	<1.0	<1.0
cis-1,3-Dichloropropene	<1.0	<1.0	<1.0
trans-1,3-Dichloropropene	<1.0	<1.0	<1.0
Methylene chloride	<1.0	<1.0	<1.0
1,1,2,2-Tetrachloroethane	<1.0	<1.0	<1.0
Tetrachloroethene	<0.50	<0.50	<0.50
1,1,1-Trichloroethane	<0.50	<0.50	<0.50
1,1,2-Trichloroethane	<1.0	<1.0	<1.0
Trichloroethene	<0.50	<0.50	<0.50
Trichlorofluoromethane	<1.0	<1.0	<1.0
Vinyl chloride	<0.50	<0.50	<0.50
Dichlorodifluoromethane	<1.0	<1.0	<1.0

NOTE: This analysis is equivalent to EPA Methods 601/8010.

Q.A. REVIEW:

Joe Stankin



ENVIROCON  
 PO BOX 1154  
 LIVINGSTON MT 59047

Water Analysis

PROJECT: Livingston / BN

LAB NO.	91-13909	91-13910	Duplicate
SAMPLE IDENTIFICATION	140101-710	140101-714	140101-714
SAMPLE SUBMITTED	04/26/91	04/26/91	04/26/91
DATE REPORTED	05/08/91	05/08/91	05/08/91
REVISED DATE	06/06/91	06/06/91	06/06/91
SAMPLE DATE	04/24/91	04/24/91	04/24/91
SAMPLE TIME	0950	1130	1130
CONSTITUENT	ug/l	ug/l	ug/l
Benzene	<0.50	<0.50	<0.50
Bromobenzene	<1.0	<1.0	<1.0
Bromochloromethane	<1.0	<1.0	<1.0
Bromodichloromethane	<1.0	<1.0	<1.0
Bromoform	<1.0	<1.0	<1.0
Bromomethane	<1.0	<1.0	<1.0
n-Butylbenzene	<1.0	<1.0	<1.0
sec-Butylbenzene	<1.0	<1.0	<1.0
tert-Butylbenzene	<1.0	<1.0	<1.0
Carbon tetrachloride	<0.50	<0.50	<0.50
Chlorobenzene	<1.0	<1.0	<1.0
Chloroethane	<1.0	<1.0	<1.0
Chloroform	<1.0	<1.0	<1.0
Chloromethane	<1.0	<1.0	<1.0
2-Chlorotoluene	<1.0	<1.0	<1.0
4-Chlorotoluene	<1.0	<1.0	<1.0
1,2-Dibromo-3-chloropropane	<1.0	<1.0	<1.0
Dibromochloromethane	<1.0	<1.0	<1.0
1,2-Dibromoethane	<1.0	<1.0	<1.0
Dibromomethane	<1.0	<1.0	<1.0
1,2-Dichlorobenzene	<1.0	<1.0	<1.0
1,3-Dichlorobenzene	<1.0	<1.0	<1.0
1,4-Dichlorobenzene	<1.0	<1.0	<1.0
Dichlorodifluoromethane	<0.50	<0.50	<0.50
1,1-Dichloroethane	<1.0	<1.0	<1.0
1,2-Dichloroethane	<0.50	<0.50	<0.50
1,1-Dichloroethene	<0.50	<0.50	<0.50
cis-1,2-Dichloroethene	<1.0	<1.0	<1.0
trans-1,2-Dichloroethene	<1.0	<1.0	<1.0
1,2-Dichloropropane	<1.0	<1.0	<1.0

*B-Street*
*Jack Thompson*
*PO Jack Thompson*



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 Water Analysis  
 PROJECT: Livingston / BN

PAGE 2

LAB NO.	91-13909	91-13910	91-13910
SAMPLE IDENTIFICATION	140101-710	140101-714	140101-714
SAMPLE SUBMITTED	04/26/91	04/26/91	04/26/91
DATE REPORTED	05/08/91	05/08/91	05/08/91
REVISED DATE	06/06/91	06/06/91	06/06/91
SAMPLE DATE	04/24/91	04/24/91	04/24/91
SAMPLE TIME	0950	1130	1130

CONSTITUENT	ug/l	ug/l	ug/l
1,3-Dichloropropane	<1.0	<1.0	<1.0
2,2-Dichloropropane	<1.0	<1.0	<1.0
1,1-Dichloropropene	<1.0	<1.0	<1.0
cis-1,3-Dichloropropene	<1.0	<1.0	<1.0
trans-1,3-Dichloropropene	<1.0	<1.0	<1.0
Ethylbenzene	<1.0	<1.0	<1.0
Hexachlorobutadiene	<1.0	<1.0	<1.0
Isopropylbenzene	<1.0	<1.0	<1.0
p-Isopropyltoluene	<1.0	<1.0	<1.0
Methylene chloride	<1.0	<1.0	<1.0
Naphthalene	<1.0	<1.0	<1.0
n-Propylbenzene	<1.0	<1.0	<1.0
Styrene	<1.0	<1.0	<1.0
1,1,1,2-Tetrachloroethane	<1.0	<1.0	<1.0
1,1,2,2-Tetrachloroethane	<1.0	<1.0	<1.0
Tetrachloroethene	<0.50	<0.50	<0.50
Toluene	<1.0	<1.0	<1.0
1,2,3-Trichlorobenzene	<1.0	<1.0	<1.0
1,2,4-Trichlorobenzene	<1.0	<1.0	<1.0
1,1,1-Trichloroethane	<0.50	<0.50	<0.50
1,1,2-Trichloroethane	<1.0	<1.0	<1.0
Trichloroethene	<0.50	<0.50	<0.50
Trichlorofluoromethane	<1.0	<1.0	<1.0
1,2,3-Trichloropropane	<1.0	<1.0	<1.0
1,2,4-Trimethylbenzene	<1.0	<1.0	<1.0
1,3,5-Trimethylbenzene	<1.0	<1.0	<1.0
Vinyl chloride	<0.50	<0.50	<0.50
Xylenes	<1.0	<1.0	<1.0

REMARKS: Sample was properly preserved and in specified container. Sample was analyzed in accordance with EPA Method 524.2.

Q.A. Review:



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LIVINGSTON MT 59047

## WATER VOLATILE SURROGATE RECOVERY

10 ug/l Surrogate Standard Spike

PROJECT: Livingston/BN

## SAMPLE NO.

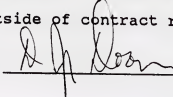
91-13909  
91-13910  
91-13910 dup-----% recovery-----  
S1 S2 S3  
(TOL) # (BFB) # (DCE) #

111	102	89
107	104	85
112	90	101

S1 (TOL) = Toluene-d8  
S2 (BFB) = Bromofluorobenzene  
S3 (DCE) = 1,2-Dichloroethane-d4QC LIMITS, % Recovery  
(80-120)  
(80-120)  
(80-120)

# Column to be used to flag recovery values with an asterisk

\* Values outside of contract required QC limits

Q.A. Review: 



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JULY 31 1991  
ENVIROCON, Inc.  
Livingston, MT

## QUALITY ASSURANCE SPIKED ANALYSIS

PROJECT: Livingston / BN

Lab No. 91-13911 was spiked with  
the following constituents with  
these results

Constituent	Spike Amount, ug/l	P(%)	Range for P(%)
1,1-Dichloroethene	5.0	123	60 - 140
Benzene	5.0	110	60 - 140
Trichloroethene	5.0	110	60 - 140
Toluene	5.0	118	60 - 140
Chlorobenzene	5.0	125	60 - 140

P=Percent recovery measured

Q.A. REVIEW: *A. Stuber*



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MAY 31 1991ENVIROCON  
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LIVINGSTON MT 59047ENVIROCON, Inc.  
Livingston, Mt.

WATER VOLATILE SURROGATE RECOVERY

10 ug/l Surrogate Standard Spike

PROJECT: Livingston / BN

SAMPLE NO.	-----% Recovery-----		
	S1 (TOL) #	S2 (BFB) #	S3 (DCE) #
91-13911	118	103	108
91-13912	113	101	104
91-13913	115	102	101

S1 (TOL) = Toluene-d8  
S2 (BFB) = Bromofluorobenzene  
S3 (DCE) = 1,2-Dichloroethane-d4QC LIMITS, % Recovery  
(80-120)  
(80-120)  
(80-120)

# Column to be used to flag recovery values with an asterisk

\* Values outside of contract required QC limits

Q.A. REVIEW: *for Standard*

